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EXAM OBJECTIVES FOR MCSE CERTIFICATION

EXAM #70-221: DESIGNING A MICROSOFT WINDOWS 2000 NETWORK INFRASTRUCTURE

Primary references are highlighted in bold.

Analyzing Business Requirements

Objective	Chapter: Section
Analyze the existing and planned business models. • Analyze the company model and the geographical scope. Models include regional, national, international, subsidiary, and branch offices. • Analyze company processes. Processes include information flow, communication flow, service and product life cycles, and decision-making.	Chapter 2: Why You Need Business Requirements Analysis in Network Design Chapter 2: Measuring the Success of a Networking Services Infrastructure Design **Chapter 2: Analysis of Business Models** **Chapter 2: Identify Existing Company Processes**
Analyze the existing and planned organizational structures. Considerations include management model; company organization; vendor, partner, and customer relationships; and acquisition plans.	**Chapter 2: Organizational Structures Influence Network Design**
Analyze factors that influence company strategies. • Identify company priorities. • Identify the projected growth and growth strategy. • Identify relevant laws and regulations. • Identify the company's tolerance for risk. • Identify the total cost of operations.	**Chapter 2: Company Strategies** Chapter 2: Company Strategies (Company Priorities) Chapter 2: Company Strategies (Projected Growth and Growth Strategy) Chapter 2: Company Strategies (Relevant Laws and Regulations) Chapter 2: Company Strategies (Risk Tolerance) Chapter 2: Company Strategies (The Total Cost of Ownership)

Objective	Chapter: Section
Analyze the structure of IT management. Considerations include type of administration, such as centralized or decentralized; funding model; outsourcing; decision-making process; and change-management process.	**Chapter 2: Existing IT Management Structure**

Analyzing Technical Requirements

Objective	Chapter: Section
Evaluate the company's existing and planned technical environment and goals. • Analyze company size and user and resource distribution. • Assess the available connectivity between the geographic location of work sites and remote sites. • Assess net available bandwidth and latency issues. • Analyze performance, availability, and scalability requirements of services. • Analyze data and system access patterns. • Analyze network roles and responsibilities. • Analyze security considerations.	**Chapter 3: Analyze Current and Planned Technical Environment and Goals**
Analyze the impact of infrastructure design on the existing and planned technical environment. • Assess current applications. • Analyze network infrastructure, protocols, and hosts. • Evaluate network services. • Analyze TCP/IP infrastructure. • Assess current hardware. • Identify existing and planned upgrades and rollouts. • Analyze technical support structure. • Analyze existing and planned network and systems management.	**Chapter 3: Impact of Design on Existing and Planned Technical Environments**
Analyze the network requirements for client computer access. • Analyze end-user work needs. • Analyze end-user usage patterns.	**Chapter 3: Analyze Network Requirements for Client Computer Access**
Analyze the existing disaster recovery strategy for client computers, servers, and the network.	**Chapter 3: Analyze Disaster Recovery Strategies for the Existing Technical Environment**

Designing a Windows 2000 Network Infrastructure

Objective	Chapter: Section
Modify and design a network topology.	Chapter 1: (the entire chapter) Chapter 2: The Life Cycle of Network Design (Data Gathering) **Chapter 3: (the entire chapter)** Chapter 4: (the entire chapter) Chapter 5: (the entire chapter) Chapter 6: (the entire chapter) Chapter 7: (the entire chapter) Chapter 8: (the entire chapter) Chapter 9: (the entire chapter) Chapter 10: (the entire chapter)
Design a TCP/IP networking strategy. • Analyze IP subnet requirements. • Design a TCP/IP addressing and implementation plan. • Measure and optimize a TCP/IP infrastructure design. • Integrate software routing into existing networks. • Integrate TCP/IP with existing WAN requirements.	Chapter 1: Network Connectivity Models Chapter 1: Windows 2000 TCP/IP Protocol and Services Chapter 3: Analyze Impact of Infrastructure Design on the Existing and Planned Technical Environment (Analyze TCP/IP Infrastructure) **Chapter 4: Designing a TCP/IP Network**
Design a DHCP strategy. • Integrate DHCP into a routed environment. • Integrate DHCP with Windows 2000. • Design a DHCP service for remote locations. • Measure and optimize a DHCP infrastructure design.	**Chapter 4: IP Configuration Strategies— the DHCP Way**
Design name resolution services. • Create an integrated DNS design. • Create a secure DNS design. • Create a highly available DNS design. • Measure and optimize a DNS infrastructure design. • Design a DNS deployment strategy. • Create a WINS design. • Create a secure WINS design. • Measure and optimize a WINS infrastructure design. • Design a WINS deployment strategy.	**Chapter 4: Name Resolution with DNS** **Chapter 4: Name Resolution with WINS**
Design a multi-protocol strategy. Protocols include IPX/SPX and SNA.	**Chapter 5: (all sections on IPX/SPX and SNA)**
Design a Distributed file system (Dfs) strategy. • Design the placement of a Dfs root. • Design a Dfs root replica strategy.	**Chapter 6: (the entire chapter)**

Designing for Internet Connectivity

Objective	Chapter: Section
Design an Internet and extranet access solution. Components of the solution could include proxy server, firewall, routing and remote access, Network Address Translation (NAT), connection sharing, Web server, or mail server.	**Chapter 8: (the entire chapter)** **Chapter 9: (the entire chapter)**
Design a load-balancing strategy.	Chapter 8: Getting to Know Microsoft Proxy Server 2.0 (Proxy Server Services) Chapter 8: Getting to Know Microsoft Proxy Server 2.0 (Combining and Integrating Proxy Services with Other Networking Services) Chapter 9: Special Considerations When Designing Internet and Intranet Sites (Design Considerations by type) **Chapter 9: Special Considerations When Designing Internet and Intranet Sites (Designing an Internet Site Infrastructure)** Chapter 9: Special Considerations When Designing Internet and Intranet Sites (Challenges with Load Balancing)

Designing a Wide Area Network Infrastructure

Objective	Chapter: Section
Design an implementation strategy for dial-up remote access. • Design a remote access solution that uses Routing and Remote Access. • Integrate authentication with Remote Authentication Dial-in User Service (RADIUS).	**Chapter 7: Designing an RRAS Solution for Dial-up Remote Access**
Design a virtual private network (VPN) strategy.	**Chapter 7: Designing an RRAS Solution for Dial-up Remote Access (Designing a VPN Strategy for Remote Access)**
Design a Routing and Remote Access routing solution to connect locations. • Design a demand-dial routing strategy.	**Chapter 7: Designing an RRAS Solution to Connect Locations**

Designing a Management and Implementation Strategy for Windows 2000 Networking

Objective	Chapter: Section
Design a strategy for monitoring and managing Windows 2000 network services. Services include global catalog, Lightweight Directory Access Protocol (LDAP) services, certificate services, DNS, DHCP, WINS, routing and remote access, proxy server, and Dfs.	**Chapter 10: Strategies for Managing and Monitoring Windows 2000 Network Services** Chapter 10: Developing Appropriate Response Strategies to Network Problems
Design network services that support application architecture.	Chapter 1: (the entire chapter) Chapter 2: (the entire chapter) Chapter 3: (the entire chapter) Chapter 4: (the entire chapter) Chapter 5: (the entire chapter) Chapter 6: (the entire chapter) Chapter 7: (the entire chapter) Chapter 8: (the entire chapter) Chapter 9: (the entire chapter) Chapter 10: (the entire chapter)
Design a plan for the interaction of Windows 2000 network services such as WINS, DHCP, and DNS.	**Chapter 4: Designing a TCP/IP Network (Designing TCP/IP Addressing and the Implementation Plan)** Chapter 5: Designing Connectivity to NetWare Resources (Services: NetWare Integration Designs) Chapter 5: Designing SNA Connectivity to IBM Mini and Mainframe Computers Chapter 5: Designing Connectivity to UNIX Servers and Clients Chapter 5: Designing Connectivity to Macintosh Clients Chapter 6: Dfs—What You Need To Know Before You Start Chapter 6: Dfs Design Strategies Chapter 7: Designing an RRAS Solution to Connect Locations (Integrating RRAS with Other Services) Chapter 8: Getting to Know Microsoft Proxy Server 2.0 (Combining and Integrating Proxy Services with Other Networking Services) Chapter 9: Providing an Infrastructure for Services to the Internet Chapter 9: Special Considerations When Designing Internet and Intranet Sites
Design a resource strategy. • Plan for the placement and management of resources. • Plan for growth. • Plan for decentralized resources or centralized resources.	**Chapter 10: Strategies for Managing and Monitoring Windows 2000 Network Services, Plan for Growth, Plan for Decentralized Resources or Centralized Resources**